

REMARKS

Claims 1-20 are pending, with claims 1-12 under current examination, and claims 13-20 withdrawn from consideration as drawn to a nonelected invention. In the Office Action,¹ the Examiner took the following actions;

- (a) objected to the Abstract;
- (b) objected to the title of the invention;
- (c) objected to claims 1, 2 and 5-12 under 35 U.S.C. § 102(b) as being anticipated by Yamanobe (JP 11-040044) (“Yamanobe”); and
- (d) rejected claims 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Yamanobe in view of Miyata (JP 2000-243248) (“Miyata”).

Applicants traverse the objections and rejections for the following reasons.

Objection to the Abstract:

In response to the Examiner’s objection to the Abstract (Office Action, p. 2), Applicants have amended the Abstract to replace the term “comprising” with the term “includes.” Accordingly, Applicants deem the objection to the Abstract overcome, and request its withdrawal.

Objection to the Title:

The Examiner objected to the title of the invention as not descriptive. In response, Applicants have amended the title and request that the objection be withdrawn.

¹ The Office Action may contain statements characterizing the related art, case law, and claims. Regardless of whether any such statements are specifically identified herein, Applicants decline to automatically subscribe to any statements in the Office Action.

Rejection of Claims 1, 2, and 5-12 under 35 U.S.C. § 102(b):

Applicants traverse the rejection of claims 1, 2, and 5-12 under 35 U.S.C. § 102(b) as being anticipated by Yamanobe. Applicants respectfully disagree with the Examiner's arguments and conclusions.

In order to properly establish that Yamanobe anticipates Applicants' claimed invention under 35 U.S.C. § 102, each and every element of each of the claims in issue must be found, either expressly described or under principles of inherency, in that single reference. Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.” *See M.P.E.P. § 2131*, quoting *Richardson v. Suzuki Motor Co.*, 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989).

Yamanobe does not disclose each and every element of Applicants' claimed invention. Specifically, Yamanobe does not disclose at least Applicants' claimed “subjecting said electron emission section to a treatment using plasma to expand a gap between the conductive deposits on the cracked portion” (claim 1).

The Examiner alleges that Yamanobe discloses “using plasma to expand a gap between deposits on the cracked portion (in view of paragraph 95, part of the carbon is removed, thus forming a gap (read crack)[]).” Office Action, p. 3. An examination of Yamanobe, however, reveals that this is an incorrect characterization.

Yamanobe's paragraph [0095] instead discloses a stabilizing process 1, in which a substrate is subjected to plasma treatment under an atmosphere containing oxygen, whereby the oxygen is terminated on the surface of a carbon body. Yamanobe's stabilizing process 1 is therefore clearly a step of terminating oxygen on the surface of a carbon body, and not a process of expanding the gap between the conductive deposits on the cracked portion, according to

independent claim 1. *See* machine-generated translation of Yamanobe, paragraph [0095], available at http://www.ipdl.ncipi.go.jp/homepg_e.ipdl.

As explained in paragraph [0095] of Yamanobe, among the carbon and carbon compounds formed in the crack and in the vicinity thereof, an intermediate product is removed, carbon (such as graphite) is maintained, and the maintained carbon is bonded to oxygen and thus terminated. This description does not disclose expanding a gap between conductive deposits on the cracked portion. Thus, Yamanobe's stabilizing process 1 removes undesired intermediates formed in a previous activating step, and does not expand a gap between conductive deposits on the cracked portion. Further, the removal of the intermediates is only incidental to the main purpose of the stabilizing process 1, that is, termination by bonding the carbon and oxygen. Therefore, Yamanobe's stabilizing process 1 instead forms a film made of an oxide.

It is only after the formation of an oxide film that Yamanobe performs another process to deposit, via vacuum deposition, an alkali metal and alkaline earth metal having a low work function in the gap between conductive thin films 4. *See* machine-generated translation of Yamanobe, paragraph [0099]. Then, a stabilizing process 2 removes excess deposition of the alkali metal or alkaline earth metal having a low work function in the gap between conductive thin films 4. Yamanobe discloses that the alkali metal or alkaline earth metal having a low work function has a high vapor pressure and is easily removed by heating. This is accomplished by heating in a vacuum. *See* machine-generated translation of Yamanobe, paragraph [0100].

Therefore, Yamanobe does not disclose "subjecting said electron emission section to a treatment *using plasma to expand a gap between the conductive deposits on the cracked portion,*" as recited in independent claim 1 (emphasis added). Therefore, Yamanobe does not anticipate independent claim 1. Independent claim 1 is therefore allowable, and dependent

claims 2 and 5-12 are also allowable at least by virtue of their dependence from base claim 1.

The 35 U.S.C. § 102(b) rejection is therefore improper and should be withdrawn.

Rejection of Claims 3 and 4 under 35 U.S.C. § 103(a):

Applicants request reconsideration and withdrawal of the rejection of claims 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Yamanobe in view of Miyata. Applicants respectfully disagree with the Examiner's arguments and conclusions. As M.P.E.P. § 2142 states, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.”

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). M.P.E.P. § 2142, 8th Ed., Rev. 4 (October 2005), p. 2100-134.

Each of these requirements must “be found in the prior art, and not be based on applicant's disclosure.” M.P.E.P. § 2143. A requirement for establishing a *prima facie* case of obviousness is not met, because Yamanobe and Miyata, taken alone or in combination, do not teach or suggest every feature of Applicants' claims.

Applicants have previously established that Yamanobe does not teach or suggest all the elements of independent claim 1. The Examiner's application of Miyata, however, fails to cure the deficiencies of Yamanobe already discussed. That is, Miyata also fails to teach or suggest at least the claimed “subjecting said electron emission section to a treatment *using plasma to*

expand a gap between the conductive deposits on the cracked portion,” as recited in independent claim 1 (emphasis added).

Even if Miyata were combined with Yamanobe as the Examiner suggests, Yamanobe and Miyata do not teach or suggest all elements recited in independent claim 1, and required by dependent claims 3 and 4. Therefore, the Examiner’s citation of Yamanobe and Miyata does not establish *prima facie* obviousness of any of claims 3 and 4. For at least these reasons, the Examiner’s rejection is improper and should be withdrawn.

Conclusion:

In view of the foregoing, Applicants request reconsideration of the application and withdrawal of the rejection. Pending claims 1-12 are in condition for allowance, and Applicants request a favorable action.

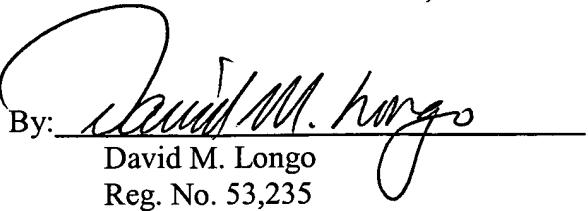
If there are any remaining issues or misunderstandings, Applicants request the Examiner telephone the undersigned representative to discuss them.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: July 26, 2006

By: 
David M. Longo
Reg. No. 53,235